

THE
BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. LXVII.

THURSDAY, JANUARY 8, 1863.

No. 23.

THE YELLOW FEVER AT PORT ROYAL, S. C.

[Communicated for the Boston Medical and Surgical Journal.]

{ U. S. GENERAL HOSPITAL, HILTON HEAD,
PORT ROYAL, S. C., Dec. 10, 1862.

MR. EDITOR.—With the present condition of our country we are all familiar. The immense army now assembled at the North, together with the divisions which are stationed along the Southern coast, present an array of armed men which has rarely been equalled in the history of the world. All these men have been assembled at the North, and are familiar with Northern climates and Northern diseases, but in all probability a large portion of them will soon be transported to the Southern country, where some diseases prevail which are not met with at the North, and which during certain seasons of the year are very fatal to those not accustomed to the climate. It has become, therefore, of more importance than heretofore, to investigate the hygienic condition of the Southern country, and to do all that can be done to throw more light upon the nature and character of the diseases to which our people now are, or are likely hereafter to be, exposed. It is my intention, therefore, to communicate for your readers the results of my experience in this Hospital in regard to the character and treatment of one of the most deadly of Southern diseases, the appearance of which in an army of unacclimated Northern men would produce more terror than the assaults of the fiercest and most remorseless of enemies. I need scarcely say that I refer to the

YELLOW FEVER.

Though the yellow fever is substantially a disease of Southern climates, and confined chiefly to the intertropical regions, yet it has occasionally prevailed in some of our Northern cities, even as far north as Boston, but it has never penetrated beyond the limits of dense population, and has not become naturalized as one of the permanent diseases in any of the cities north of the Potomac. Its characteristics are therefore little known to Northern physicians,

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few of whom have ever seen a case of it. It is said to be essentially an American disease, and that it is nowhere else met with except in Southwestern Europe and Western Africa, where it has been brought from America. It is not found in Asia, though the southern part of India would seem to present all the conditions found in America favorable to the production and wide-spread prevalence of the disease.

The intermittent, bilious, typhus, typhoid and other similar diseases of that type, deriving their origin from marsh miasm, prevail throughout every part of the Southern country during the summer and autumn; but the yellow fever, on the contrary, is chiefly confined to the cities and towns near the coast, and never extends far from the limits where the salt and fresh waters intermingle. From the fact that the yellow fever is chiefly confined to the locality of dense population, it has been inferred that the causes which produce it are the same as those which give rise to the class of bilious affections, with the addition of some decomposed animal ingredients, subjected to a high temperature for a long time during the heats of summer, when the thermometer has been for two or three months at an average of not less than 79 or 80 degrees of Fahrenheit. The usual time for commencing its ravages is the latter end of summer or the beginning of autumn, and it always disappears immediately after it is met by the first frosts. The disease seldom attacks the same person twice.

U. S. STEAMER DELAWARE.

As I have before observed, my object at the present time is to give the results of my experience in the treatment of the disease as it appeared in this locality, and especially of the cases which were admitted into this hospital during the months of September, October and November of the present year. Before doing so, I shall state some facts connected with the appearance of the disease in this place, leaving the inferences chiefly to your readers.

The United States Steamer Delaware departed from Hilton Head on the 26th of July last for St. Augustine and Tortugas, where she took in a detachment of the 7th New Hampshire, which had been left sick there in June. The Delaware returned by way of Key West, which place she left on the 14th of August, and arrived at Hilton Head on the 26th of the same month.

Assistant Surgeon Cornick, who was a passenger, had been much exposed to yellow fever, and was taken sick at Tortugas, with what he supposed to be a mild attack of that disease, but he had entirely recovered before he arrived here, and no other case existed on board. The steamer was subjected to a quarantine of twelve days, at the end of which time Surgeon Dalton, who was also a passenger, said that there was no case of yellow fever on board.

On the 8th of September her quarantine expired, and she immediately landed several persons who were sick on board, and lay for

about twelve hours at the end of the Long Wharf, but she did not otherwise communicate with this station. She then proceeded to Seabrook, some five miles distant from Hilton Head, took in coal, and departed thence for the North. Some of the sick persons landed were sent directly to the hospital, without stopping at any other place on shore; others did not come into the hospital till four days afterwards.

PATIENTS ADMITTED.

As there had been previously no indications of the existence of yellow fever on this Island, and as no alarm whatever in relation to that disease existed, the surgeon immediately in attendance did not at first recognize its true character. He treated it as an ordinary bilious fever of a mild type. The death of one of the patients, however, who afterwards put on the yellow and mottled appearance so characteristic of the disease, together with the discovery of black vomit in the stomach at the *post mortem*, presented the true condition of things in unmistakable characters. As soon as the true nature of the disease was discovered, all the patients who were known to have been received from the same source were separated from the others and placed in a ward by themselves. They were then carefully treated on ordinary principles, and apparently with some success and abatement of urgent symptoms, but black vomit soon after appeared amongst them, and the disease speedily carried away all who were attacked by it.

One of the patients mentioned above, who was not attacked by black vomit, had the sallow appearance and peculiar physiognomy incidental to yellow fever, with bleeding at the gums. He had escaped black vomit, but had been attacked by symptoms which might have been mistaken for scurvy. I have witnessed the same result in some other cases. He was directed to have beef-tea and other nourishing and easily-digested food, with alcoholic and other stimulants, also astringent gargles, and in a short time he was restored to reasonable health, though he did not speedily regain his full strength.

About this time, a patient was admitted from the New York 47th, which lay encamped within the entrenchments at Hilton Head, who, it was said, had been some days sick, and the disease appeared to be obscure. He had vomiting and purging, and I prescribed for him the remedies usual in such cases. The appearance of black vomit, however, revealed to me the real nature of the disease, and he died within twenty-four hours afterwards. It did not appear that he had had any communication with the Delaware, or any person connected with it, previous to his admission into the hospital.

All the cases above referred to amounted to eleven in number, of whom nine died and two recovered. Of these, four were admitted on the 8th, three on the 12th, two on the 14th, one on the 16th, and one on the 17th of September, as will be seen by reference to the following table.

List of Patients admitted into the Hospital, Hilton Head, Port Royal, S. C., in September, October and November, 1862.

NAMES.	RANK.	REGIMENT.	CO.	ADMITTED.	REMARKS.
C. B. Kimball,	Private.	7th. N. H.	H.	Sept. 8th.	Died Sept. 15th, 1862.
D. K. Ripley,	"	"	C.	"	" " 9th, "
George Sweetner,	"	"	B.	"	" " 12th, "
R. Schofield,	"	47th N. Y.	K.	"	Ret'd to duty Oct. 3d, '62.
Morris Winn,	"	7th N. H.	B.	Sept. 12th.	Died Sept. 18th, 1862.
Timothy Schoener,	"	"	G.	"	Ret'd to duty Oct. 29, '62.
Patrick Burns,	"	"	G.	"	Died Sept. 14th, 1862.
Henry Oliver,	"	"	I.	Sept. 14th.	" " 15th, "
Horace Benton,	"	"	K.	"	" " " "
Charles Stearns,	"	"	H.	Sept. 16th.	" " 17th, "
James McKee,	Serg't.	47th N. Y.	F.	Sept. 17th.	" " 19th, "
John Lowney,	Civilian.	"	"	Oct. 9th.	" Oct. 10th, "
S. P. McKinstry,	Private.	47th N. Y.	E.	Oct. 10th.	" " 13th, "
John Hayes,	"	Qu. M. Dep't.	"	"	Ret'd to duty, Oct. 20, '62.
Patrick Barker,	"	"	"	"	" " 23, '62.
Henry McKuskee,	"	"	"	"	" " " "
Jos. H. Knowlton,	"	"	"	"	" " 24, "
Thomas Hogue,	"	"	"	"	" " 20, "
John M. Poulston,	"	"	"	"	" " " "
James Wright,	Private.	97th Penn.	D.	" 22d.	Died Oct. 23d, 1862.
John Williams,	Civilian.	"	"	"	Ret'd to duty Oct. 23, '62.
Nicholas Carstens,	"	"	"	" 24th.	Died Oct. 29th, 1862.
W. F. Fahenstock,	Private.	76th Penn.	E.	" 25th.	Ret'd to duty Oct. 29, '62.
J. G. Huggins,	"	97th Penn.	E.	" 26th.	Died Nov. 1st, 1862.
James Welsh,	Civilian.	"	"	"	Ret'd to duty Nov. 5, '62.
Charles King,	"	"	"	" 27th.	" " Oct. 29, '62.
Archie C. Towne,	Private.	1st. Ms. Cav.	D.	" 29th.	Died Nov. 5th, 1862.
H. Cashman,	Civilian.	"	"	"	Ret'd to duty, Oct. 31, '62.
Abner Macartney,	Private.	97th Penn.	F.	" 31st.	Died Nov. 1st, 1862.
Sketchly Morton,	Lieut.	97th Penn.	I.	"	" " 12th, "
Wm. D. Burkhart,	Private.	76th Penn.	F.	Nov. 3d.	Ret'd to duty Nov. 20, '62.
John Blake,	Captain.	9th Maine.	C.	" 5th.	Died Nov. 9th, 1862.
Henry Welsh,	Private.	3d R. I.	H.	" 6th.	" " " "
Samuel Miles,	"	97th Penn.	B.	" 7th.	Ret'd to duty Nov. 19, '62.
Fred. A. Gould,	Civilian.	"	"	" 10th.	Died Nov. 13th, 1862.
George A. Cottrell,	"	"	"	"	Ret'd to duty Nov. 20, '62.
William Wood,	Private.	N. Y. V. Eng.	I.	"	Died Nov. 13th, 1862.

SUBSIDENCE OF THE DISEASE.

After the cases beforementioned there was no suspicious case admitted into the hospital, and no death occurred which could be attributed to yellow fever for a long time, and we began to think that the disease had been brought here by the Delaware, and that it had departed after having spent itself on the persons already infected before they came on shore. We flattered ourselves with the idea that they had contracted the disease at Tortugas or Key West, and that it had died out without leaving any successors to continue or propagate the disease here. In this hope, however, we were disappointed.

REAPPEARANCE OF THE DISEASE.

On the evening of the 9th of October, twenty-two days after the admission of the last of the cases to which I have before referred, a patient was brought into one of the wards under my care a little after dark, from the Quartermaster's Department. I examined him by candle-light, and found that his eyes were deeply congested, his face bloated and red, his stomach irritated, with tenderness of the epigastrium. He had nausea, with efforts to vomit, and complained of headache, especially of the forehead above the eyes. He informed

me that his bowels had been constipated for several days. His pulse was about 90, and rather small. As he was brought in accompanied by three other persons, all of whom appeared to have been drinking freely, I concluded that they had all been drinking together for three or four days, and that the symptoms observed were chiefly indicative of that fact. I accordingly prescribed for him aq. camph. to allay the irritability of the stomach, and directed that pil. cath. comp. No. iij. should be given to him as soon as there was a reasonable probability that he could retain them. A large sinapism was also applied over the epigastrium. This was about 7 o'clock in the evening. The next morning about 7 o'clock, or twelve hours afterwards, I was called to see him. I found that in the night he had been attacked with vomiting, which, on examination, proved to be black vomit, that about two quarts had been thrown up, and that he was then *in articulo mortis*. After death the yellow and ecchymosed condition of the skin, especially about the head and neck, removed all doubt, and showed clearly the true character and nature of the disease.

The last-mentioned patient, as has been already stated, was admitted on the 9th, and died on the morning of the 10th, about twelve hours after he was brought to the hospital. On the same morning shortly after his death, another man *walked* into the hospital. I met him on the corridor, and thought he had come in on some business. He also was from the Quartermaster's Department. He was admitted into one of the wards under my care. He had the symptoms of a slight attack of bilious fever, but complained of nothing in particular. He had scarcely any fever, and seemed rather to be weary than sick. I prescribed for him such remedies as I thought appropriate, and saw him frequently, but he gradually grew worse, delirium and black vomit came on, and notwithstanding all our efforts he died forty-eight hours after he had walked into the hospital.

The occurrence of two decided and strongly-marked cases of yellow fever, in men of the Quartermaster's Department, both of whom had been at work in the same neighborhood near General Mitchell's head-quarters, impressed us with the unwelcome fact that there was a centre of infection near the place, and that whether it had sprung up from the remnants of the disease left by the Delaware or not, or whether it was of spontaneous production, it had now become naturalized amongst us. This impression amounted to a certainty when soon afterwards six more cases were presented for admission, all engaged in the same employment and from the same locality.

From the 10th to the 22d of October, there were no new applications for the admission of yellow fever cases into the hospital, and we began again to hope that the disease had become extinct. But in this we were again disappointed, for from the latter date to the end of the month there was almost daily a succession of new cases.

During the last week in October we also heard of a considerable number of cases which did not enter the hospital. It was during this week that the lamented General Mitchell, who had, without doubt, contracted the disease at Hilton Head, went up to Beaufort to die.

DECLINE OF THE DISEASE.

After the 1st of November the number of cases gradually diminished, and after the 10th they ceased altogether; the weather, from about October 25th, having become much cooler. The character of the cases, however, in November, was not less severe than those previously admitted; on the contrary, some of the most malignant cases occurred during that period. By some authors it has been stated that towards the close of epidemic yellow fever the cases become much milder. This does not correspond with our experience, as some of the last of our cases were amongst the worst.

Throughout the yellow fever districts of the South, the appearance of the first frosts is looked for with great anxiety, as there is an absolute certainty that it will bring the disease to a close for that season. Our experience here affords a clear proof of the correctness of that observation. The first frosts took place on the 7th, 8th and 9th of November, and by reference to the table it will be seen that the last cases were admitted to the hospital on the 10th of that month. It is quite probable that these patients had been sick, as is most usually the case, for two or three days before admission, or at least that the stage of incubation was too far advanced to be destroyed by the change in the condition of the atmosphere.

TREATMENT.

I have already referred incidentally to the treatment of some of the cases; but it may be proper that I should make some further remarks on this part of the subject.

There are two modes of treating yellow fever in the regions where it chiefly prevails, each of which has its advocates. The first is the method practised in the West Indies, chiefly amongst the French inhabitants. It consists of treating the disease by mild measures, and by remedies applicable to the treatment of all fevers, and trusting rather to the recuperative energies of the system after the removal of noxious matters than to any active interference. In the first stage a small bleeding perhaps, mild diaphoretics with demulcent beverages; slight purgatives, fomentations to the abdomen, a few leeches to the epigastrium, with the warm bath, and, in the more advanced stages, the preparations of bark, the mineral acids and other mild tonics.

The other mode of treating yellow fever is more specific in its character. It consists mainly in the exhibition of very large doses of quinine and calomel frequently repeated. On these the chief reliance is placed, while at the same time no means are neglected to excite the action of the emunctories, so that the morbid matters

may be carried off through the skin and kidneys. Stimulants freely administered, with nourishing and easily digested food, complete the routine of the treatment.

I have before stated that a number of the yellow fever patients which were first brought into the hospital, as soon as the true nature of their disease was discovered, were collected into one ward and carefully treated on general principles, not quite so mildly as by the French West India method, but still not approaching the specific and energetic course above described. This plan of treatment having been attended with little success in the cases referred to, it was determined to try, in future, the more active and specific treatment recommended by Dr. Fenner of New Orleans and other eminent Southern practitioners, as well as by Dr. Cummins and other British surgeons who have had much experience in the management of yellow fever cases in the West India Islands. When, therefore, the patients presented after the 9th of October were admitted, we were prepared to receive them, and each one of them was subjected to the following formula. The feet were placed in a bucket of water just as hot as it could be borne, and a sufficient quantity of mustard added to make it almost as strong as a mustard plaster. After bathing the feet for twenty-five or thirty minutes, that is, as long as it could be borne, the patient was placed in bed and covered with three or four blankets; twenty grains of quinine and the same number of grains of calomel were given to him at one dose, with a teaspoonful of spirits of nitre, and a large sinapism was applied to the epigastrium. The blankets were permitted to remain for three or four hours, and then were gradually removed. The sinapism was permitted to remain as long as it could be borne, and until it had made a decided impression. The dose of calomel was repeated every three hours, and a teaspoonful of spirits of nitre as frequently. To those who vomited excessively, a mixture containing two drops of creasote to each dose was given every half hour or hour, according to circumstances. All the patients admitted in the month of October, after the 9th, were treated according to this formula, with such additions and deviations as were indicated in each individual case. The success of this mode of treatment will be shown by the table which accompanies this. Most of them were constipated when admitted, and continued so during the treatment, requiring active cathartics for the purpose of relieving that condition.

Though the full doses of quinine and calomel were continued every three hours for two days and then gradually diminished, and continued three or four days longer, only one of the six patients exhibited any specific action of the calomel, and that one but very slightly.

It is also proper to remark, that all these cases came into the hospital early in the progress of the disease, and that though most of them on their convalescence showed very decided evidence that they had had this disease, by yellowness of the skin, and one of them by

bleeding at the gums, yet they must be considered altogether as mild cases.

CASES REPORTED.

In the foregoing remarks I have referred incidentally only to the treatment; but as it may be more satisfactory to go a little into detail, I shall do so by giving a particular account of some of the cases which have passed under my observation.

Captain John Blake, 9th Maine, Co. C, was admitted into the hospital November 5th, about 3 o'clock in the afternoon. Told me he had come up from St. Augustine about two weeks previously, and that he had lived, since his arrival, at the Port Royal Hotel. He said he had been taken sick about three days before he came to the hospital; that he was first taken with a chill, and then had fever, but that the fever had subsided; that at first his bowels were constipated, and that he had taken a dose of cathartic pills which then operated freely.

When he came first to the hospital he complained chiefly of chilliness and severe headache, especially over the eyes; had also pain in the back, particularly low down near the sacrum; complained also of great weight and extreme tenderness of the epigastrium, the least pressure giving him pain. The abdomen also was tender on pressure, as well as the region of the bladder. He had difficulty of urinating freely. The bowels were constipated, not having been moved for two days past. Tongue clear, and looked natural. The pulse did not indicate febrile action, but was small, and not more rapid than in health.

Treatment.—The chilliness of which he complained being severe, gave him brandy punch freely to create reaction. Applied a very large sinapism over the stomach and bowels. Ice water to the head, to be continued till the headache should be relieved. Flannels wrung out of hot water to be applied over the pubic region, and to be continued till the urine flows freely. Covered him up with three or four heavy blankets. Directed him to have a teaspoonful of spiritus æth. nitr., and gave him pil. cath. comp. No. iij. to act on the bowels.

November 6th, morning. Bowels had been disturbed three or four times during the night. Dark-green-looking evacuations. Urine had flowed freely after the hot water appliances to the pubes. Headache and pain in the back much diminished; chilliness, however, still continues. Had perspired very little, if any. Directed his feet and hands to be immersed in water as hot as it could be borne, to which a large quantity of mustard had been added, and to remain as long as he could bear it. Prescribed quin. sulph. and calomel, each grs. xx., to be given at once, and repeated every two hours. Brandy punch and beef tea to be given freely.

12 o'clock, M., became very thirsty, and drank ice water freely. Again applied sinapism over the stomach and bowels, and directed it to remain as long as he could bear it. Continue all the remedies.

3 o'clock, P. M. About this time nausea came on, followed by vomiting. Bilious in appearance at first, but soon afterwards it was mixed with a few dark flakes. All the treatment continued.

November 7th, morning. Appeared to be much better. Head-ache nearly gone. Chilliness also has disappeared, and natural warmth seems to have returned. Nausea much relieved, and no vomiting. Bowels in good condition, evacuations appearing natural. Urine flowed freely, and apparently in sufficient quantity. Treatment continued as before.

November 8th, morning. Had vomited somewhat during the night. At about 2 o'clock this morning, dark flakes appeared amongst the matter thrown up. At about 8 o'clock, decided black vomit came on. Previous to this time, the black vomit was small in quantity, but now much increased, and large quantities were thrown up. The skin, which before this time had been but little affected, now became deeply tinged with the peculiarly yellow color so characteristic of the disease.

November 9th, morning. The patient continued to throw up large quantities of black vomit till about 4 o'clock this morning, when he expired. No post-mortem examination was made.

It will be observed that the most marked feature in this case is the delusive appearance of amendment just before the black vomit came on, and which very frequently, though not always, precedes that almost certainly fatal indication.

Henry Welsh, private, 3d Rhode Island, Co.'H, was admitted into the hospital November 6th, 1862, about 9 o'clock, A. M. He appeared to be robust, and well formed. Had generally enjoyed good health. Had been working at the United States Bakery, and had been up at night for two or three months. He stated that he had been sick for four or five days, but had had no particular treatment. Complained of severe headache, especially of the forehead over the eyes, and had slight bleeding of the nose. Eyes congested and slightly yellow. Severe pain in the back and under the left shoulder. Complained also of weight and great præcordial oppression, with soreness and tenderness of the epigastrium on pressure. Constant nausea, and efforts to vomit frequently. Urine passed not without some effort. Bowels constipated. Pulse 100, small, and feeble. Had moaning and great general distress. Complained of feeling cold.

Treatment.—November 6th. Immediately on being admitted, his feet and arms to the elbows were immersed in water, as hot as it could be borne, with a large quantity of mustard added, where they remained until the mustard made a strong impression. He was then placed in bed, and covered with three or four blankets. As nausea and retching were the most distressing symptoms, I prescribed the following mixture:—*R.* Soda bicarb., ʒ ij.; spts. lav. comp., f ʒ ss.; syrup. simpl., f ʒ i.; aq. camph., f ʒ ijss. *M. S.*, coch. mag. p. r. n., in the hope of relieving it. Hot brandy punch was

given to him freely, as he complained of being cold, for the purpose of bringing on reaction. As the urine did not flow freely, and appeared to be deficient in quantity, I directed spirits æth. nitr. f ʒj. to be given to him every three hours, with hot applications over the abdomen and pubis, and ol. tereb. gtt. x. to be given *ter die*. A large sinapism also was applied over the epigastrium, and permitted to remain till it had produced a decided impression. The main dependence, however, was placed on the following: *R.* quin. sulph., hydrarg. nitr., aa ʒj. M. Ft. chart. No. iij. s., one to be given every two hours. The patient did not perspire freely. Vomited a little bilious matter, mixed with ingesta, during the day. Directed brandy milk punch, hot, to be given freely.

November 7th, morning. Had passed a very uneasy night. Much moaning and general distress. The sinapism again applied to the epigastrium. The powders of quinine and calomel to be continued every three hours. The spirits æth. nitr. and ol. tereb. also to be continued same as yesterday. Still has pain and distress about the region of the stomach and bowels. General distress rather increased. About 6 o'clock, P. M., singultus came on very severely. Gave him spirits æth. sulph. comp. f ʒj., every half hour, with very little advantage. Continued to vomit more or less till 8 o'clock, P. M., when black vomit made its appearance, at first in small quantity, but soon increased greatly. Singultus frightfully severe, shaking the whole bed and creating great distress. Directed the following mixture to meet these symptoms. *R.* Mucil. aca., f ʒ ij.; liq. morph. sulph., f ʒ ss.; chlorof. f ʒj. M. s. A teaspoonful, p. r. n. This mixture succeeded perfectly, and there was no more trouble with that symptom during the subsequent treatment. About midnight the black vomit set in, with more severity and frequency. Continued all the remedies above mentioned.

November 8th, morning. The black vomit still continues very copiously. All the vessels were filled with it, unmixed with other matters. The floor on both sides of his bed was covered with puddles of it, and his own and the adjoining beds were saturated with it. Black vomit still pouring from his mouth in streams. He died vomiting, about 3 o'clock in the afternoon of this day. It was computed that the clear black vomit which had been thrown up during the last twenty-four hours had amounted to not less than three gallons. After death the skin became more yellow and mottled.

Autopsy, fifteen hours after death. General appearance, robust and well developed. Black vomit from mouth and nose. *Skin* yellow, with bluish spots, especially about the head and neck. *Lungs* engorged and congested; melanotic appearance; emphysematous, probably owing to position. *Liver* enlarged; under surface of right and left lobes softened. Capsules easily torn off. Gall-bladder nearly empty; bluish slate color; tissue softened and changed, yellowish; bile blackened and thickened. *Spleen* natural in size; bluish slate color; under surface engorged. *Stomach*—mucous mem-

brane softened and destroyed, being easily peeled off; black vomit in it; complete change in appearance of membrane. Black vomit was found in every part of the intestines, both small and large, and the mucous membrane everywhere was disorganized, and easily peeled off. The contents of the colon were not quite so dark in color as those of the stomach and small intestines.

The above-described case was decidedly the most malignant of any treated in this hospital, and it is not easy to conceive of anything of the kind more frightfully characteristic of this most terrible of diseases.

DEATH OF GEN. MITCHELL.

The following report of the last illness and death of General Mitchell, has been kindly furnished to me by his attending surgeon.

"Major-General Mitchell and Staff left Hilton Head Saturday, Oct. 25th, at 3 o'clock, P.M., for Beaufort, S. C., where they arrived at 4½ o'clock. The General seemed much troubled in consequence of the effect which he feared would be produced upon the Department by the sickness of his Staff and his sudden move from Headquarters. He remarked, 'the morale of the Department being gone, all is lost.' His care and extreme anxiety for his sons and the other members of his Staff, together with the care of the Department, created a state of depression which, no doubt, acted very unfavorably upon him during his sickness. He continued comparatively well, however, till Sunday night, October 26th, at which time he was attacked with a chill. October 27th, at 8 o'clock, A.M., I found him with high fever. Pulse 120. Skin peculiarly pungent, hot and dry. Intense supra-orbital pain. Violent pain in back, at junction of sacrum with lower lumbar vertebra. Eyes injected, as if just awakened. Face flushed. Edges and tip of tongue scarlet. Fleeting sensations of cold along the spine.

"I prescribed a mustard bath; pulv. ipecac., 3 ss. Emesis soon occurred, producing free perspiration. Ginger tea; gum-water, with spts. æther. nitr. *ad libitum*; bottles of hot water to feet; iced water to head.

"2 o'clock, P.M.—Patient is perspiring; pulse 110. Ordered quin. sulph., 3 i.; also, tinct. verat. viridis gtt. v. every two hours. Iced gum-water and ginger tea continued.

"8 o'clock, P.M.—Patient is perspiring gently; pulse 100; pain in head and back much less. Prescribed fl. ext. sennæ, fl. ext. rhei, aa 3 i.; ol. tereb., gtt. x., m., every four hours during the night.

"Oct. 28th, 8 o'clock, A.M.—Patient rested well during the night; takes thin gruel with a relish. Pulse 90; pain in head and back almost entirely gone. Prescribed quin. sulph., 3 i. Drinks continued.

"12 o'clock, M.—Patient seems much more comfortable; has had one dejection; kidneys act well; takes nourishment freely; pulse 85.

"2 o'clock, P.M.—Patient much worse. After my visit at 12 o'clock, he ordered his bed changed, got up, was attacked with a chill, followed by high fever; pulse 120; extremely restless, and

complained of great uneasiness in epigastric region. Prescribed mustard bath, sinapisms, and other measures to promote perspiration, but without any permanent effect, as he refused to take medicine, or even to remain in bed.

"6 o'clock, P.M.—Patient is suffering very much from nausea and vomiting; pulse 100, becoming quite feeble. Prescribed brandy, champagne, and other stimulants, as freely as he would take them.

"Oct. 29th, 6 o'clock, A.M.—Had remained with patient all night; rested but little; nausea and vomiting continued. Epigastrium having been blistered, patient could not longer bear the mustard. Iced drinks and stimulants freely taken. Mucilage gum. acaciæ 3 i., creasoti gtt. i. m., given every hour for a time; also, spts. ammon. acet., none of which seemed to check the nausea. Urine entirely suppressed.

"9 o'clock, A.M.—Patient says he feels more comfortable; pulse 65, and gradually becoming slower and weaker; vomiting continues at longer intervals.

"12 o'clock, M.—Patient continues to sink; takes stimulants freely.

"8 o'clock, P.M.—Patient continues about the same; has vomited but twice since 12 o'clock.

"Oct. 30th, 9 o'clock, A.M.—Surgeon Crane, Medical Director, stopped with patient during the night. He has failed rapidly since my last visit. Asked for writing materials, and dictated his will, after which he said, 'The struggle of death has passed—God has called me, and I cheerfully obey the summons.' Patient is now extremely restless and constantly sighing, the usual precursor of black vomit.

"10 o'clock, A.M.—Black vomit by patient has just commenced; has voided one drachm of thick, oily-looking urine.

"12 o'clock, M.—Patient has thrown up quite an amount of black vomit since 10 o'clock; pulse just perceptible at wrist. Is now *in articulo mortis*. The body is rapidly assuming the characteristic lemon-colored appearance. Petechiæ and vibices, so common in grave cases of yellow fever, are appearing. The tongue is protruded with much difficulty. Hands and arms move without control of the will. Signs of uræmic poisoning are now strongly marked. Squinting of the eyes, and pupils very much contracted. Partial delirium. Spasmodic contraction of the muscles, &c., until 6 o'clock and 15 minutes, when he died. No *post mortem* was made.

"*Remarks.*—The question may arise, why was not mercury used in this case? I answer, my experience in two severe epidemics of yellow fever has been against the use of that medicine. No medicine, however powerful, can affect the secretion of the liver in a grave case of the disease. Some surgeons advocate the use of large doses of calomel and quinine. I have every confidence in large doses of the latter, but mercury, in my opinion, has a tendency to produce that peculiar state of the blood which we are so anxious to

prevent. The secretion of the skin must be promoted in all grave cases of yellow fever, or the patient must die. The poison circulating in the system cannot be neutralized, and must be eliminated. In my opinion, neither the liver nor kidneys can be affected by medicines unless the secretion of the skin be first promoted, without which the patient must die of uræmic poisoning.

"In the epidemic of 1857 in Jacksonville, Florida, almost every patient under the usual treatment of mercury and quinine died, whereas almost all recovered after the practice of first promoting and then continuing the secretion of the skin was adopted. Indeed, this is the only process by which the poison can be eliminated from the system, and there is no more efficient sudorific than a large dose of quinine—say from one to two drachms, which I have frequently given.

"I am of opinion that had General Mitchell remained in bed and kept the skin in good condition, he would without doubt have recovered. His improvement after the first twelve hours was not the delusive change caused by uræmic poisoning, which usually precedes the outburst of black vomit. His fever had almost disappeared, and the liver and kidneys were beginning to perform their healthy function—a condition of things which never exists in the apparent improvement above mentioned.

"How this poison is so abundantly and quickly produced, is still amongst the mysteries of yellow fever; but that it exists, and is one of the most fatal symptoms, is beyond question.

J. D. MITCHELL, *Surg. 8th Me. Vols.*,

"To THOS. T. SMILEY, M.D., U. S. }
Gen. Hospital, Hilton Head. }

In charge of General Mitchell and Staff."

"Beaufort, S. C., Nov. 28th, 1862.

I feel much inclined to concur with Surgeon Mitchell in his views as above expressed in relation to the use of calomel in yellow fever. If not absolutely injurious, it does not appear to me to have been productive of any good in the cases I have treated. Certain it is that the progress of the disease is much too rapid to permit the specific effects of mercury to take place in time, even supposing its tendency to be beneficial.

DIFFICULTY OF DIAGNOSIS.

I have several times referred to the fact that the true nature and character of the disease, when some of the patients were first brought in, were not immediately recognized. It is quite probable that this arose in part from our want of experience in treating it. It may be proper, however, to state that physicians of the largest experience have reported that there is generally great difficulty in the diagnosis in the early stages, before black vomit has commenced. The yellow color of the skin, which is so characteristic, especially after death, does not make its appearance in many cases at all before black vomit has set in, or convalescence has commenced in cases which recover. All the authors who have written on the yellow fe-

ver speak of this difficulty. In the first place, all fevers have in their commencement so much in common, that it is extremely difficult to say for a short time what particular form of disease is about to make its appearance. In yellow fever there is this further difficulty, that the fever is generally very slight, and frequently, after the first stage is over, subsides almost entirely. Again, in the early stages the appearance of a yellow fever patient often so closely resembles that of a man who has been drinking freely, that it would be extremely difficult always to distinguish between them. Dr. Cummins, Surgeon in the British Navy, says: "It is nearly impossible to distinguish between the morning effects of a night's debauch and the fever. The best way is to treat all cases which exhibit symptoms of congestion as I have recommended for cutting short yellow fever, and a few hours will decide whether it is the drunkenness of the disease or of rum, and sixty or seventy grains of quinine will do the latter no harm, and the calomel still less, for it rarely salivates in large doses followed by castor oil." Dr. E. D. Fenner, also, in his valuable remarks on the yellow fever in New Orleans, makes the following emphatic statement: "Physicians may say what they please about their being able to distinguish a case of yellow fever as soon as they examine it. We do not believe it possible, according to their ideas. Rarely does a summer pass in which we do not hear of some intelligent and experienced practitioner being perfectly astonished at seeing what he had pronounced a case of intermittent or remittent bilious fever terminate in black vomit or other hæmorrhage." It should excite no surprise, therefore, that we should not have possessed the power to do or the skill to distinguish that which physicians who have spent a great part of their lives in treating the disease have been unable to accomplish.

HOW WAS THE DISEASE TRANSMITTED?

That the poison which is capable of producing the yellow fever can be carried in the hold of a vessel, and can in that way be transferred to another ship or transmitted to another country, admits of no question. The proofs of such cases are too numerous and overwhelming to admit of a doubt. It is quite probable that it never appears spontaneously in any of our northern cities. In numerous instances when the disease has appeared there, it has been preceded by the arrival of one or more ships from some port where the yellow fever then prevailed. The vessel, enclosing in her hold the virus which engenders the disease, arrives at some northern city, and the temperature and other circumstances being favorable, it commences to diffuse itself, and in some unknown manner, possibly resembling the action of leaven, forms a new centre of infection, from which the disease begins again to spread. In the application of this principle to the case before us, the question presents itself whether the outbreak of the yellow fever on the 9th of October, in the Quartermaster's building, was the continuance of the disease

brought by the Delaware, or whether it was of spontaneous production, arising from the hygienic condition of that locality and other places in the immediate neighborhood of the Union Square.

UNION SQUARE.

Let us now examine the plan of that part of Hilton Head near the Long Wharf, where the Delaware arrived on the 8th of September, immediately after her release from Quarantine, and remained for about twelve hours.

Commencing on the extreme end of the Long Wharf and proceeding on shore, we find, immediately on reaching the end of the wharf, on the right hand, the road, which runs close along the water's edge to the General Headquarters, first passing by the side of the Commissary Building, and then by the Staff Officers' Quarters. Proceeding further directly from off the Long Wharf, we find, on the left hand, General Terry's Headquarters, and on the right the Commissary Store, and, immediately adjoining, the long range of the Quartermaster's Building, in the extreme further end of which the yellow fever first made its appearance, thirty-one days after the Delaware had left the end of the Long Wharf, and twenty-two days after the last one of that class of cases which undoubtedly originated from that vessel had been admitted into the hospital. It will be found that the previous history of this locality is of some importance.

I have been informed by Capt. Ganettson, U.S.V., Depot Quartermaster, that the place where the Quartermaster's Building now stands, and the adjoining neighborhood, with a large portion of what is now the Union Square, was, when the United States forces captured Hilton Head, on the 7th of November, 1861, a swamp; and not only a swamp, but also the place into which the secessionists, who before occupied the Fort and its vicinity, had cast all their dead animals, filth and offal of every kind; that a portion of it also was covered by a dense growth of weeds and bushes. When the Union forces commenced the putting up of buildings there, they removed none of the filth, neither animal nor vegetable, but merely beat down the weeds and bushes, carted in sand upon it, and covered it all over a foot or two in depth. They then erected the building, and laid the floor directly on the sand which covered the filth at a slight depth below, without the shadow of a sleeper or anything to elevate the floor. It was amongst the persons who worked in this building, and whose sleeping place was directly over the worst part of this deposit, that the disease broke out, thirty-one days after the Delaware had departed, and from which all those who were admitted into the hospital on the 9th and 10th of October were received, one only excepted.

Commencing again, let us begin with the General Headquarters where General Mitchell then resided. These headquarters stand very near the bay, elevated only a little above high water mark, and at a very short distance on the right hand is Battery Hunter, which

has been erected near to, or rather partly in the edge of the swamp. In making this fortification, the ground being most solid on the side next to the headquarters was dug out and thrown up, leaving a ditch, which was, at the time General Mitchell resided there, and is now, the greater part of the time, full of stagnant water. This ditch extends up to, and in the rear of the hotel. The hotel, which also stands mainly over the ditch I have mentioned, has in front of it nearly the same kind of substratum as I have described at the Quartermaster's building, and has some advantage by the elevation of the floors from off the ground; but the rear extends almost into the swamp which is marked on the map. The Post Master's house and the Post Office appear to have been erected on ground a little more solid than I have described, but immediately beyond Adams's Express Office and to the right of the stables the swamp extended originally nearly up to where the stables stand, but has now been filled in with stable manure and every sort of similar deposits almost up to the creek, so that but little of the swamp in that place remains in its original condition. The stable manure here deposited has recently been covered over slightly with sand. The creek itself is a foul receptacle, filled with decayed vegetable matter, into which the tide flows, and affording a good habitation for alligators some of which are ten feet long. At high water the creek flows up over a considerable portion of the plot I have just described, and at low water a great portion of that plot is laid bare, and the mud and decayed animal and vegetable matter exposed to the penetrating rays of an almost vertical sun. If the fermenting theory be correct, there could not have been found a locality the condition of which was better adapted to receive the virus than the one under consideration.

On comparing the description of this locality with the map, without any previous knowledge of what occurred there, it would not have been difficult to have anticipated that sickness of some kind must result; and the yellow fever actually broke out where disease and death might have been expected. I have already mentioned the cases which were sent to the hospital from the Quartermaster's building, which is not more than two hundred feet from General Mitchell's Headquarters. The road along the shore leading from the Long Wharf to General Mitchell's Headquarters was seldom used; but the General and all the members of his staff, as well as visitors, always went from the main entrance and passed around and close to the corner of the Quartermaster's building, immediately in contact with the locality where the outbreak of yellow fever, to which I have referred, of the 9th and 10th of October had occurred, and over the ground where all the filthiness I have described lay buried at a slight depth below. It should excite no astonishment, therefore, that General Mitchell and nearly every member of his staff should have sickened, and that he and several members of his staff should have died, or that Colonel Brown of the Third Rhode Island, and other military officers who visited him at his

headquarters, should have shared the same fate. Is it at all surprising that the Port Royal Hotel should have contributed a large quota for sickness and death? Is it surprising that Adams's Express Office and the stables beyond it, should have contributed some of the worst cases which were sent to the hospital?

That the U. S. Steamer Delaware brought the disease from Key West, where it prevailed when she left that port, and that the cases brought to this hospital during the month of September originated on board of that vessel, there can be no doubt, as all except one of them can be traced directly to that source; but whether the reappearance of the disease when it broke out in the Quartermaster's building, on the 9th and 10th of October, and the subsequent spread of the disease in that neighborhood, originated from the virus left by the Delaware, or whether it was of spontaneous production arising from the causes which I have mentioned, I shall not attempt to determine. I have presented the facts as accurately as I could obtain them, and I leave each of your readers to decide for himself.

PATHOLOGY.

I have said that it is not my design to write a treatise on yellow fever, and I do not intend now to deviate from that intention. There are one or two points, however, on which I cannot refrain from offering a few brief remarks.

The cause, or presumed cause, which gives rise to the first inception of yellow fever, I have already referred to—that is, the decomposition of some kind of vegetable matter mixed with an animal ingredient, under circumstances of prolonged high temperature and other conditions favorable to the development of that peculiar poison; but the exact pathological condition which exists when the fever sets in, when the yellowness of the skin takes place, when the black vomit commences, when death ensues, is enveloped in much of mystery.

What is the pathological condition which produces the peculiar and unique yellow, orange or lemon color of the skin? I know of no attempt to answer that question. In fact, the yellowness of the skin, except as a symptom, has been quite neglected by those who have written about the disease, and so far as I know no attempt has been made to show what it is that produces this peculiar color, or the pathological condition which precedes it. When we ask this question, we shall doubtless be told that it arises from a deranged condition of the liver; but in what this deranged condition consists, we shall not be told. In two cases which I have examined post mortem, the liver has been deeply engorged, but several accurate observers have reported that it has not unfrequently been found in a shrivelled and bloodless condition. If it were otherwise, it would not prove that this color of the skin is produced by that condition of the liver, as the appearance of the skin in no way approximates to that which we see in jaundice, when the bile is diffused in the

blood, and in that way supplies the coloring matter which gives that peculiar tinge to the skin. Does, then, the peculiar color of the skin in yellow fever arise from the bile diffused in the blood? I do not think that it does. In my opinion the matter which colors the skin is in the circulation without reference to the liver, and is the product of the peculiar poison on which the disease depends.

The sensible properties of black vomit have been often described. When recently discharged from the stomach, it appears like a uniform or homogenous fluid, which, on standing, separates into a dark-colored flaky matter which subsides, and a nearly transparent supernatant fluid, but which has a slightly yellowish appearance. This separation takes place soon after it is thrown up, and if kept in an air-tight vessel it undergoes no further change. It is said to be nearly tasteless or acid. This description, however, gives no explanation of its origin, and the question still recurs, What is black vomit? This question is constantly repeated, but the echo as frequently dies away without any satisfactory response. Dr. Fenner calls it a "hæmorrhage;" but if so, the word must have been used in some latitudinarian sense not usual amongst physicians and unsupported by its derivation.

Professor Wood has expressed it as his opinion that black vomit is blood somewhat altered by its passage through the epithelium. What permits or compels the blood to be somewhat altered in passing through the epithelium, he does not tell us. If the learned Professor had ever seen black vomit, he would not have called it blood somewhat altered. Blood somewhat altered is no longer blood: but black vomit is not blood somewhat altered; it is totally, entirely altered, and it seems to me that those who give it the name of blood at all, in any kind of sense, however qualified, are evidently wrong, as its sensible properties in no way sustain them. If it be argued, as some have done, that it is secreted from the blood, that is abandoning the whole ground, and is quite another matter; for mucus, pus, urine, milk, &c., are secreted from the blood, but nobody ever thinks of calling either of them blood somewhat altered. The microscopic observations of Dr. Reese on black vomit, by which he discovered numerous animalculæ in it, revealed no blood corpuscles. Dr. Hassall, also, in his microscopic observations on the black vomit, in which he found, amongst other matters, "the ramose sporules of a fungus," discovered no blood corpuscles. Can any substance which possesses none of the sensible properties of blood, and contains no blood corpuscles, be properly called blood, or even blood somewhat altered? If black vomit, then, be neither blood nor blood somewhat altered, what is it? If that question be proposed to me, I answer that, in my opinion, it is a substance, *sui generis*, secreted from the bloodvessels into the stomach, and, not unfrequently, into the bowels also, by some diseased action, in a manner analogous to the secretion of the rice-water evacuations into the bowels in Asiatic cholera, and that the one is just as much entitled to be called

blood, or blood somewhat altered in its passage through the epithelium, as the other; and yet whoever heard of any one calling the rice-water evacuations of cholera "blood somewhat altered"?

After all, neither the color of the skin, nor the matter secreted into the stomach and bowels, is the disease. They are the effects only of the morbid condition, and the disease itself must be sought for further back. I venture to suggest that further microscopic observations should be carefully made, not only on black vomit, but on the blood itself in cases of typhus icterodes, in order to ascertain if further light can be thrown on this obscure subject by a minute and careful examination of that vital fluid.

CONTAGION.

Though the question as to the contagious or non-contagious character of yellow fever was for a long time hotly disputed, I think that the medical opinions of those who have been familiar with it, and have had the best opportunities of observation, now incline to the side of the non-contagious character of the disease. Still, as opinions are far from being unanimous, a short account of our experience here on that point will not be out of place.

By the table which accompanies this, it will be seen that the first yellow fever patients were admitted into this hospital on the 8th of September, and that the last one was admitted on the 10th of November, and that some of the last of those admitted did not leave the hospital till nearly two weeks later. We had the disease, therefore, in the hospital for a period of full two months and a half. The patients were not only in one ward, but in all the wards. They were intermingled with the other patients, not one of whom had probably had the disease himself, or had ever before seen a case of it in others. The physicians and nurses, who were of course constantly engaged in administering to their necessities, were in no way protected from an attack. Including the physicians, nurses, patients in the hospital, visitors and persons employed in different ways, there must have been at least three or four hundred persons, unacclimated, who inhaled the same air, and were exposed more or less to the effects of all the secretions and exhalations of those who were sick with the disease. of whom many, as I have stated, had it and died of it in its worst form; and yet not a single individual in the hospital, and no one that visited it temporarily from without, is known to have had the yellow fever, or any disease resembling it.

As for myself, I have resided for many years in Philadelphia, and though the yellow fever has in a few instances, at remote intervals, visited that city, I had never seen a case of it until these patients were brought into this hospital. I had never travelled south of the Potomac, and could not have had any disease which would have afforded protection against an attack of this one. Here I have lived and slept in a room separated only by a thin board partition, with numerous open spaces, from a ward in which six patients died in the

course of a week. I have had a large number of the yellow fever patients under my special care during the whole of their treatment, amongst whom were some of the very worst cases. I have visited them very frequently, both by day and by night. I have been present with them often while vomiting large quantities of the substance which is peculiar to the disease. I have stood in puddles of black vomit on the floor, by the bed-side, when the vessels were filled and the bed-clothes of the patient and those of the adjoining beds were saturated with it. I have made, in one of the very worst of the cases, a *post-mortem* examination, and have stood leaning over the cadaver, with my hands bathed in a mixture of blood and black vomit, for more than half an hour, while at the same time I was breathing the exhalations which arose from the body. Yet I have been, during all this time, in my usual health, and have had no symptom which by any possibility could be attributed to that disease. If contagious, it would seem to have been impossible that I could have escaped from taking it. Can a disease be contagious which does not affect a single person out of three or four hundred exposed to it? We have no hesitation, therefore, in saying that, according to the experience of this hospital, the yellow fever is not contagious.

I feel strongly inclined to discuss the practical bearings of this subject on commerce, and to offer some remarks on the necessity and extent of quarantine regulations, but I fear that I have already exhausted the patience of yourself and of your readers. I conclude, therefore, while I am,

Yours, very respectfully,

THOS. T. SMILEY, M.D.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, JANUARY 8, 1863.

TREATMENT OF DIPHTHERIA.—A correspondent at Ravenna, Ohio, writes as follows:—

“Diphtheria is proving very fatal here this winter. I would like to inquire if there has been any essential change of treatment in your city within the past year, or any method has been adopted which is more successful than those heretofore used. If you would give us the most approved plan of treatment we should be extremely grateful, particularly if it should prove more efficacious than our own. Heretofore we have managed the disease quite satisfactorily, but this season it baffles the skill of our ablest physicians.”

To the inquiry of our correspondent we regret that we cannot give a very satisfactory answer. Diphtheria is one of those mysterious diseases, like Asiatic cholera, that seem, in their malignant form, to defy all remedies. Boston has heretofore been remarkably exempt from its visitations, it never having been properly epidemic here. In fact, we should say it is one of the rarest diseases with us, and many a practitioner in a small country town has had a larger experience in

treating it than any physician here. Such being the case, we cannot speak from any extended experience of the superior efficacy of any special course of treatment. Our correspondent gives no details of the phenomena of the disease as now prevailing in his locality, and we cannot of course understandingly recommend any particular remedies. From what we have seen and heard of the disease here, we should say that chlorate of potass, with tonics, is the remedy upon which most reliance is placed. We should be glad to have a more detailed account from our correspondent of the epidemic now prevailing in his vicinity.

CONFECTION OF PUMPKIN SEEDS FOR TÆNIA SOLIUM.—*Mr. Editor,*—Seeing an extract in your Journal of last week, relative to the treatment of tænia with pumpkin seeds, and having had occasion to prescribe the confection of pumpkin seeds in three cases of tænia within two years, my last patient this week, a little girl of seven years of age, I have thought my experience might not be uninteresting to your readers. My patients fast twenty-four hours before taking the remedy, and this is a very important part of the treatment. To a child six or eight years of age, give ℥iv. of pumpkin seeds (the husks being removed) thoroughly bruised with ℥i. of white sugar, and add ℥iv. of milk. This is a very agreeable diet for children. Three hours after administer ℥ss. of castor oil; to an adult give double the quantity. This treatment seems very simple, yet it has never failed to expel the tænia whenever I have prescribed it.

A. K. CUMMINGS, M.D.

Claremont, N. H., January 1st, 1863.

MR. EDITOR,—In examining a large number of men for service in the army, I have accidentally hit upon a point which, though of slight importance, is nevertheless interesting anatomically, and I should be glad to know if the fact has been noticed by others. In passing the hand down the vertebral column, there is a lozenge-shaped space, situated over the lower lumbar vertebræ, where the papillæ of the skin are very fully developed, to a greater extent, in fact, than in any other part of the body, and giving a decided sense of roughness to the hand. As far as my experience goes, this condition is constant; and my experience has been confirmed by two or three gentlemen to whom I have mentioned the fact.

B.

THE letter given below has been sent to the Dean of the Faculty of some of the Medical Colleges, and it being impracticable to send it to all, their attention is called to it.—*American Medical Times.*

SURGEON-GENERAL'S OFFICE, December 22, 1862.

SIR,—It has been determined to require from candidates entering the medical staff of the army, that they shall have attended at least one course of lectures on hygiene and military surgery.

Information is already received at this office that more than one medical school has determined to establish a chair for the teaching of the above branches, and your particular attention is invited to the propriety of adding to the faculty of your school a professor of hygiene and military surgery.

In this manner, not only will the general education of candidates for graduation be advanced, but the U. S. Army Medical Service will

be the gainer in having more competent men present themselves for admission.

Very respectfully, your ob't serv't,

WM. A. HAMMOND, *Surgeon-General.*

ANALYSIS OF CHOCOLATE.—The following interesting notice has been gleaned from the French journals by Mr. William Procter, the accomplished editor of the *American Journal of Pharmacy*:—

"M. Alfred Mitscherlich has found in 100 parts of Guyaquil cacao, 45 to 49 per cent. of butter; 14 to 18 of starch; 0.34 glucose; 0.26 cane sugar; 5.8 cellulose; 3.5 to 5 coloring matter; 13 to 18 albuminoid matter; 1.2 to 1.5 theobromine; 3.5 ashes; 5.6 to 6.3 water. *The proportion of starch is very considerable*; it is a fact not to be overlooked by experts who find chocolate mixed with feculent substances. The coloring matter appears to be an altered product, because the fresh seeds are white. Theobromine is found in the shells of the cacao which contain one per cent. of their weight."

POTASH FROM WOOL.—M. Maumené, a French chemist, has recently showed that cold soft water would extract from sheep's wool a kind of greasy soap, a combination of certain fatty and oily acids with the alkali potash—the remarkable fact being that the potash was almost free from that far more abundant alkali, soda. By charring this soap, and then extracting the residue with water, very pure carbonate of potash is obtained. The process is carried out on a commercial scale at Rheims, in the department of the Marne, and samples of the various products there obtained—potassa and its salts—were shown in the International Exhibition.—*London Chemist and Druggist.*

The surgical corps of the Mass. Eye and Ear Infirmary has been increased, and Drs. G. Hay and H. Derby are elected Surgeons to the same, in addition to the gentlemen who already occupy the position.

In order to insert the whole of Dr. Smiley's valuable paper in this number of the JOURNAL, our usual variety, including several communications, is omitted.

VITAL STATISTICS OF BOSTON.

FOR THE WEEK ENDING SATURDAY, JANUARY 3d, 1863.

DEATHS.

	Males.	Females.	Total.
Deaths during the week	40	43	83
Ave. mortality of corresponding weeks for ten years, 1853—1863,	40.3	38.6	78.9
Average corrected to increased population	00	00	86.88
Death of persons above 90	0	0	0

Mortality from Prevaling Diseases.

Phthisis.	Croup.	Scar. Fev.	Pneumon.	Varicella.	Dysentery.	Typ. Fever.	Diphtheria.
14	4	6	7	0	0	2	1

DEATHS IN BOSTON for the week ending Saturday noon, Jan. 3d, 63. Males, 40—Females, 43.—Accident, 1—anæmia, 1—apoplexy, 2—asthma, 1—disease of the bowels, 1—inflammation of the bowels, 1—congestion of the brain, 2—disease of the brain, 2—bronchitis, 2—catarrh, 1—chorea, 1—consumption, 14—convulsions, 2—croup, 4—diphtheria, 1—dropsy, 3—dropsy of the brain, 2—epilepsy, 2—scarlet fever, 6—typhoid fever, 2— hæmoptysis, 1—disease of the heart, 1—homicide, 1—infantile disease, 2—insanity, 1—disease of the liver, 1—congestion of the lungs, 3—inflammation of the lungs, 7—marasmus, 1—meningitis, 1—old age, 2—paralysis, 3—pertussis, 2—pleurisy, 1—puerperal disease, 1—suicide, 1—tumor (of the brain), 1—unknown, 2.

Under 5 years of age, 28—between 5 and 20 years, 11—between 20 and 40 years, 20—between 40 and 60 years, 14—above 60 years, 10. Born in the United States, 57—Ireland, 21—other places, 5.